CONTRACT

SPECIAL PROVISIONS

CSI-Inch/Pound

Project No: **SP-15-6(50)280**

Name: **Bridge Preservation I-15 Near Lehi**

Seal Coats / Preservation

County: **UTAH**

Bid Opening: **May 18, 2004**

Date

2004 - U.S. Standard Units (Inch-Pound Units) March 15, 2004

Table of Contents

SP-15-6(50)280

I. 2004 Standard Specifications

The State of Utah Standard Specifications for Road and Bridge Construction, U.S. Standard Units (Inch Pound Units), Edition of 2004 applies on this project as a static Specification Book as well as all other applicable specification changes.

Refer to Part XII (Special Provisions) for other project specific specifications.

II. List of Revised Standard Drawings

None at this time.

III. Materials Minimum Sampling and Testing

Follow the requirements of the Current Materials Minimum Sampling and Testing Manual:

Materials Minimum Sampling and Testing Manual reference can be found from the UDOT Web Site at:
http://www.udot.utah.gov/index.php/m=c/tid=645

NOTICE TO CONTRACTORS

Sealed proposals will be received by the Utah Department of Transportation UDOT/DPS Building (4th Floor), 4501 South 2700 West, Salt Lake City, Utah. 84114-8220, until 2 o'clock p.m. Tuesday, May 18, 2004, and at that time the download process of bids from the USERTrust Vault to UDOT will begin, with the public opening of bids scheduled at 2:30 for Seal Coats / Preservation of Bridge Preservation I-15 Near Lehi in UTAH County, the same being identified as State Project No: SP-15-6(50)280.

Federal Regulations:
Wage Rate Non-Applicable.

Project Location: 0.04 Miles of Route: 0015 from R.P. 279.5 to R.P. 279.5

The principal items of work are as follows (for all items of work see attachment):
Polymer Overlay
Pothole Patching
Traffic Control

The project is to be completed: in 20 Working Days.

Other Requirements:
All project bidding information, including Specifications and Plans, can be viewed, downloaded, and printed from UDOT's Project Development Construction Bid Opening Information website, http://www.udot.utah.gov/index.php/m=c/tid=319. To bid on UDOT projects, bidders must use UDOT's Electronic Bid System (EBS). The EBS software and EBS training schedules are also available on this website.

Project information can also be reviewed at the main office in Salt Lake City, its Region offices, and its District offices in Price, Richfield, and Cedar City.

Project Plans cannot be downloaded or printed from the website unless your company is registered with UDOT. Go to UDOT's website to register. Unregistered companies may obtain a **CD**, that contains the Specifications and Plans, from the main office, 4501 South 2700 West, Salt Lake City, (801) 965-4346, for a fee of $20.00, plus tax and mail charge, if applicable, none of which will be refunded.

As required, a contractor's license must be obtained from the Utah Department of Commerce.

Each bidder must submit an electronic bid bond from an approved surety company using UDOT's Electronic Bid System (EBS); or in lieu thereof, cash, certified check, or cashier's check for not less than 5% of the total amount of the bid, made payable to the Utah Department of Transportation, showing evidence of good faith and a guarantee that if awarded the contract, the bidder will execute the contract and furnish the contract bonds as required.

The right to reject any or all bids is reserved.

If you need an accommodation under the Americans with Disabilities Act, contact the Construction Division at (801) 965-4346. Please allow three working days.

Additional information may be secured at the office of the Utah Department of Transportation, (801) 965-4346.

Dated this 24th day of April, 2004.

UTAH DEPARTMENT OF TRANSPORTATION
John R. Njord, Director

Revised Date:

Utah Department of Transportation
Bidder's Schedule

Bid Opening Date: 5/18/2004
Region: REGION 2
Project Number: SP-15-6(50)280
County: UTAH
Project Name: Bridge Preservation I-15 Near Lehi
Concept: Seal Coats / Preservation
Funding: STATE
Bid Items Version#: 1

#	Item	Description	Quantity	Unit
10 - ROADWAY				
1	012850010	Mobilization	1	lump sum
2	013150010	Public Information Services	1	lump sum
3	015540005	Traffic Control	1	lump sum
4	01554010*	Variable Message Sign	16	device day
5	027650050	Pavement Marking Paint	5	gallon
20 - STRUCTURES				
6	03371000*	Polymer Overlay	30465	square foot
7	039210020	Parapet Sealing	1010	foot
8	039320010	Concrete Slope Protection Repair	600	square foot
9	039340010	Pothole Patching	6120	square foot
10	079220010	Relief Joint Crack Sealing	270	foot

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Measurement and payment. Read all related documents carefully.

MEASUREMENT AND PAYMENT

SP-15-6(50)280

The Department will measure and pay for each bid item as detailed in this section. Payment is contingent upon acceptance by the Department.

Items are listed by Specification and in tables as follows:

Item #	Bid item number	Bid Item Name	Unit of measurement and payment
Additional information goes here.			

1	**012850010**	**Mobilization**	**Lump sum**
	Payment	**Amount Paid**	**When Paid**
	First	The lesser of 25% of Mobilization or 2.5% of contract	With first estimate
	Second	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 5% of contract
	Third	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 10% of contract
	Fourth	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 20% of contract
	Final	Amount bid in excess of 10% of contract price.	Project Acceptance-Final

2	**013150010**	**Public Information Services**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

3	**015540005**	**Traffic Control**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

4	**01554010***	**Variable Message Sign**	**Device day**
1. Deduct all Department costs of corrective action against monies due to Contractor. 2. Device day: The number of devices used to control, direct, or warn traffic per calendar day or part of a calendar day.			

5	**027650050**	**Pavement Marking Paint**	**Gallon**
The Department will not pay for removal of unauthorized, smeared, or damaged markings.			

6	**03371000***	**Polymer Overlay**	**Square Feet**

7	**039210020**	**Parapet Sealing**	**Feet**

8	**039320010**	**Concrete Slope Protection Repair**	**Square Feet**

9	**039340010**	**Pothole Patching**	**Square Feet**
Estimated plan quantities are based on preliminary field review for bidding purposes only. Repair the actual quantities determined by the Engineer. Pothole patching may be reduced, deleted, or increased over the bid quantities from the contract. If any of these situations occur, the price of the actual quantity will be paid for at the contract unit price. Department will not allow additional compensation for repairing blow throughs, or for removing and repairing failed patches.			

10	**079220010**	**Relief Joint Crack Sealing**	**Feet**

Summary Report

Project: SP-15-6(50)280 **Version: 1**

Bridge Preservation I-15 Near Lehi

Detail	Alt Group	Alt #	Description
10 - ROADWAY	0	0	

Item Number	Description	Qty	Unit
012850010	Mobilization	1	Lump
013150010	Public Information Services	1	Lump
015540005	Traffic Control	1	Lump
01554010*	Variable Message Sign	16	Dev•d
027650050	Pavement Marking Paint	5	gal

Detail	Alt Group	Alt #	Description
20 - STRUCTURES	0	0	

Item Number	Description	Qty	Unit
03371000*	Polymer Overlay	30,465	sq ft
039210020	Parapet Sealing	1,010	ft
039320010	Concrete Slope Protection Repair	600	sq ft
039340010	Pothole Patching	6,120	sq ft
079220010	Relief Joint Crack Sealing	270	ft

Detailed Report

SP-15-6(50)280

Version: 1

Bridge Preservation I-15 Near Lehi

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
01554010*	**Variable Message Sign**	16	Dev•d

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					16.0	
					16.0	

Item Number	Description	Use Qty	Unit
027650050	**Pavement Marking Paint**	5	gal

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					3.0	White
C-783					2.0	Yellow
					5.0	

Detailed Report

SP-15-6(50)280 Version: 1

Bridge Preservation I-15 Near Lehi

20 - STRUCTURES **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
03371000*	**Polymer Overlay**	30,465	sq ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					30,465.0	NB AND SB
					30,465.0	

Item Number	Description	Use Qty	Unit
039210020	**Parapet Sealing**	1,010	ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					1,010.0	NB AND SB
					1,010.0	

Item Number	Description	Use Qty	Unit
039320010	**Concrete Slope Protection Repair**	600	sq ft

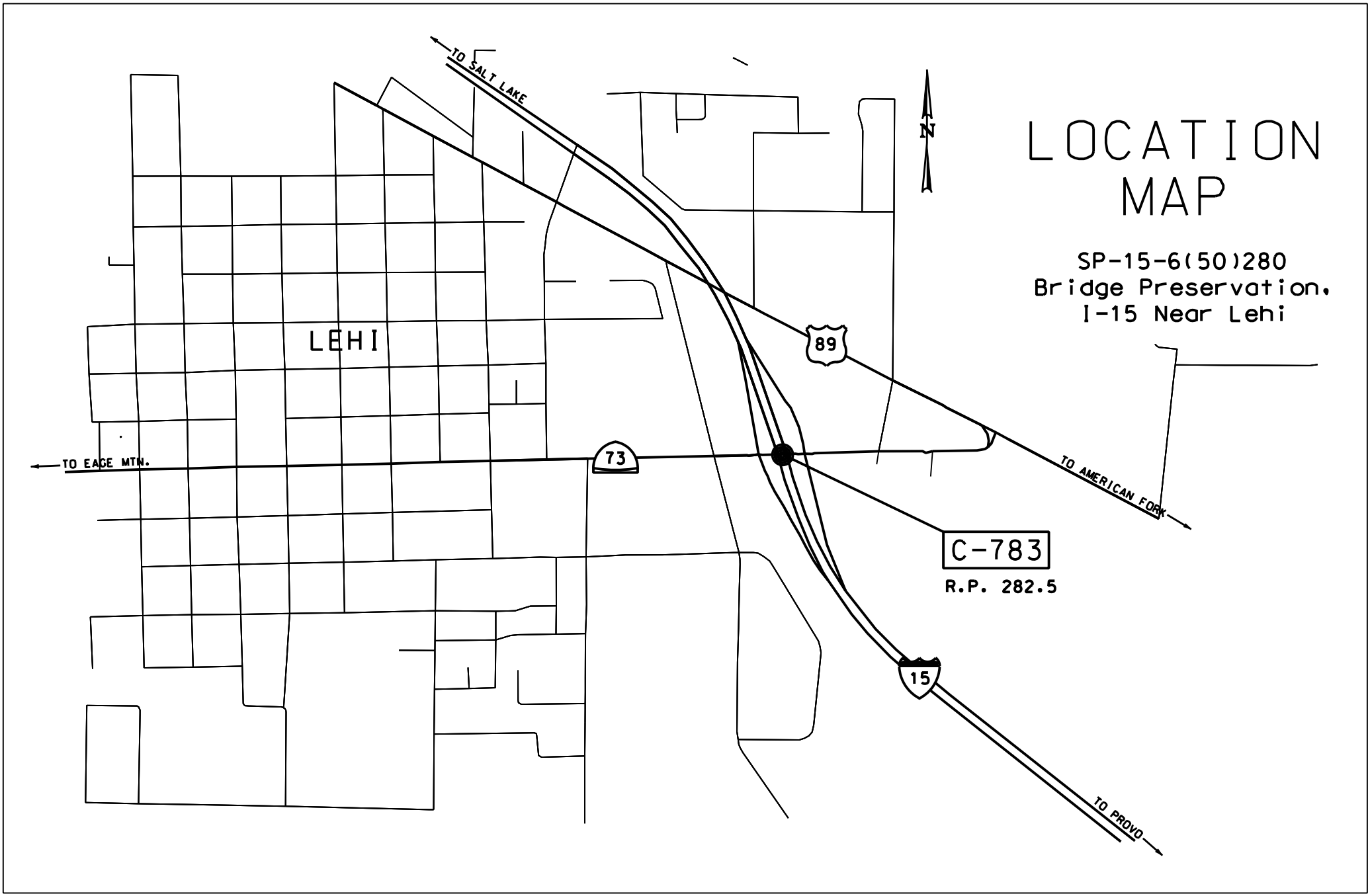
Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					600.0	SB ONLY
					600.0	

Item Number	Description	Use Qty	Unit
039340010	**Pothole Patching**	6,120	sq ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					6,120.0	NB AND SB
					6,120.0	

Item Number	Description	Use Qty	Unit
079220010	**Relief Joint Crack Sealing**	270	ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
C-783					270.0	NB AND SB
					270.0	



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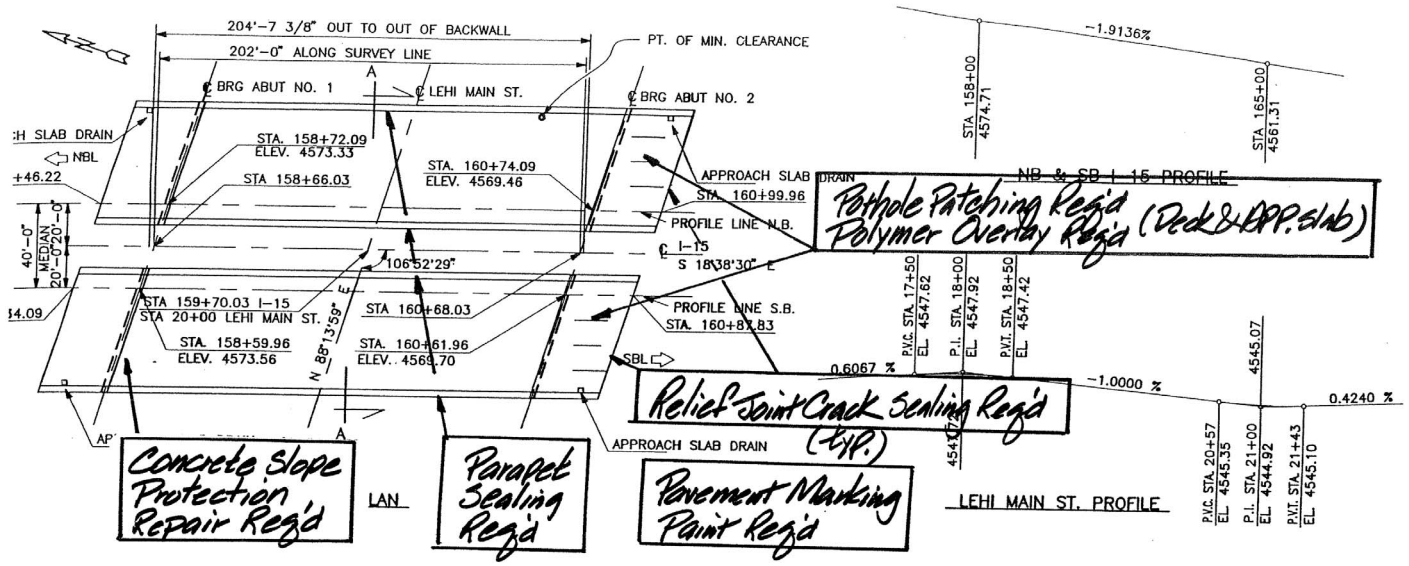
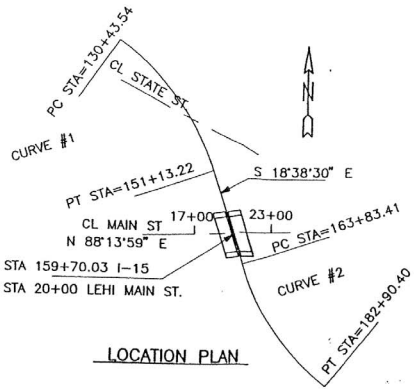




LOCATION PLAN

GENERAL NOTES

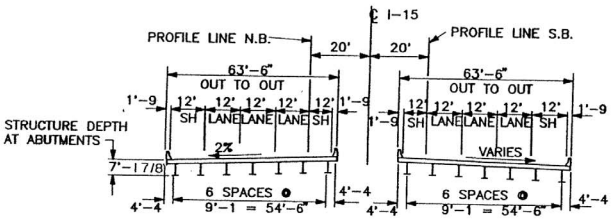
1. MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE UTAH DEPARTMENT OF TRANSPORTATION STANDARD SPECIICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, EDITION OF 1979, AND SUPPLEMENTS THERETO, WHICH ARE IN EFFECT AT THE DATE OF REQUEST FOR BIDS.
2. ALL REINFORCING STEEL SHALL BE DEFORMED BILLET-STEEL BARS CONFORMING TO ASTM DESIGNATION A615, GRADE 60.
3. ALL STRUCTURAL STEEL SHALL BE STRUCTURAL CARBON STEEL CONFORMING TO AASHTO DESIGNATION M-270 GRADE 50 EXCEPT WHERE NOTED OTHERWISE.
4. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4" EXCEPT WHERE NOTED OTHERWISE.
5. COVER TO REINFORCING STEEL SHALL BE 2" EXCEPT WHERE NOTED OTHERWISE.
6. ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS AA(AE) EXCEPT WHERE SPECIFIED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE EPOXY COATED.

CURVE DATA

VE 1	CURVE 2	
141+14.28	PI	173+64.81
36°13'10"	Δ	33°22'20"
1°45'	D	1°45'
3274.04'	R	3274.04'
1070.74'	T	981.40'
2069.68'	L	1906.98'

I-15 SUPERELEVATION DATA

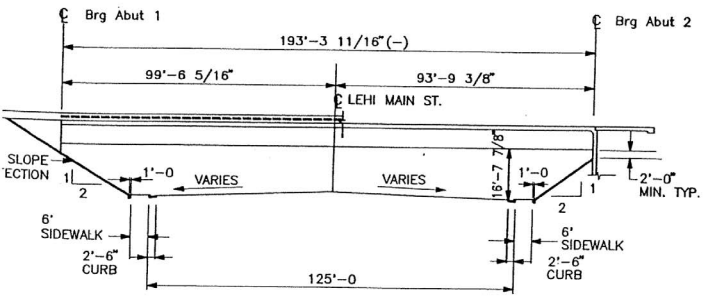
STA	LEFT	RIGHT
156+50	-2%	-2%
159+25	-2%	-2%
161+00	-2%	0%
162+76.47	-2%	+2%
165+50	-5.1%	+5.1%



SECTION A-A

DESIGN DATA

HS 20-44 OR INTERSTATE ALTERNATE LOADING IN ACCORDANCE WITH AASHTO SPECIFICATION OF 1989 AND INTERIM SPECIFICATIONS.
CAST-IN-PLACE CONCRETE: fc = 1,400 PSI, fs (REINF) = 24,000 PSI, N = 8
STRUCTURAL STEEL = fs = 27,000 PSI
WEARING SURFACE: 1/2" CONCRETE 35 LBS/SQ. FT. FUTURE WEARING SURFACE.
DESIGN SPEED: I-15 70 MPH, LEHI MAIN ST. 40 MPH



ELEVATION
(NORMAL TO LEHI MAIN ST.)

INDEX OF SHEETS

ORIGINAL PLAN SHEETS

FOR INFORMATION ONLY SHEETS FROM DRG. F-12 1,2,4,5,6,7,8,9 & 12

INFORMATION ONLY
Except to Indicate Location of Required Work

QUANTITIES

	ITEM	ESTIMATED	UNIT	AS CONST.
	REMOVAL OF BRIDGES	1	LUMP	
	CONCRETE CLASS AA (AE) EST. QUANT. 1,484 CU. YDS)	1	LUMP	
	REINFORCING STEEL (EPOXY COATED)	286,451	LBS	
(1)	STRUCTURAL STEEL (EST. QUANT. 1,683,034 LBS.) SPECIAL ITEM	1	LUMP	
	DRIVEN PILES	3,063	LIN. FT.	
	FURNISHING PILE DRIVING EQUIPMENT	1	LUMP	
	CONCRETE SLOPE PROTECTION	1,428	SQ. YDS	
	GRANULAR BACKFILL BORROW	502	CU. YDS	

NO.	BY	DATE	REVISIONS
(1)	MPP	10/92	CORRECTED STEEL QUANT.

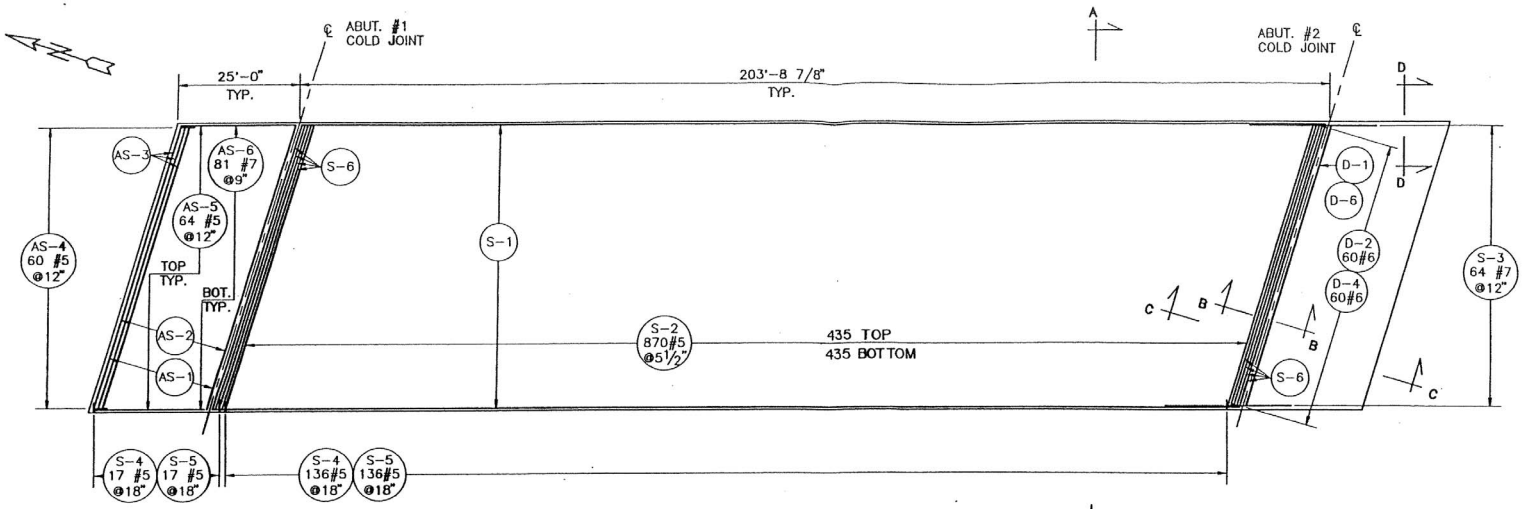
UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

LEHI MAIN STREET INTERCHANGE
I-15 OVER LEHI MAIN ST.
SITUATION AND LAYOUT

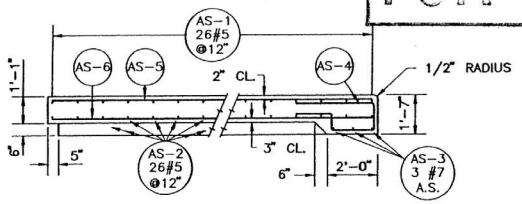
DESIGN	AOB 5-7-91	CHECK	CF 6-92	
DRAWN	BJ 5-7-91	CHECK	AOB 5-7-91	
QUANT	AOB 5-12-91	CHECK	CF 6-92	159+70.03 STATION
APPROVAL RECOMM.	DATE	ENGR. LEADER		UTAH County
APPROVED	DATE	STATE STRUCTURAL ENGR.		DRG. NO. C-783

I-15-6(107)283

SHT 1 OF 15



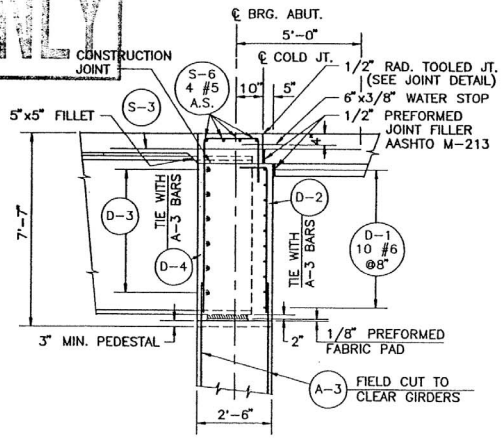
FOR INFORMATION ONLY



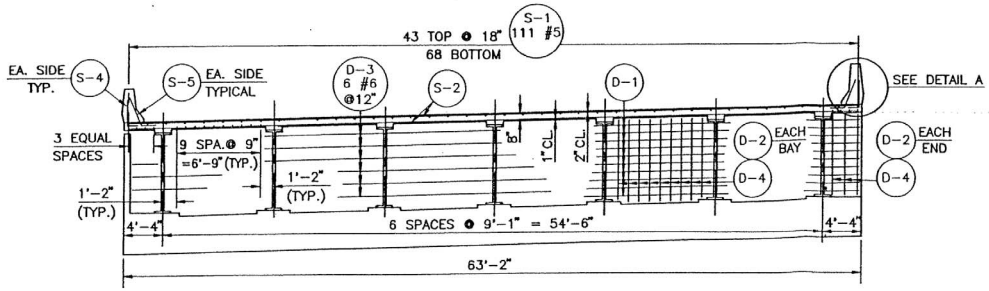
SECTION C–C

1. NUMBER DESIGNATES PLACING SEQUENCE.
2. ARROW DESIGNATES REQUIRED DIRECTION OF PLACEMENT.

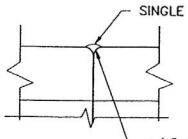
DECK PLACING SEQUENCE



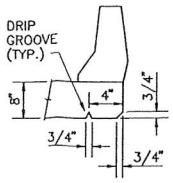
SECTION B–B



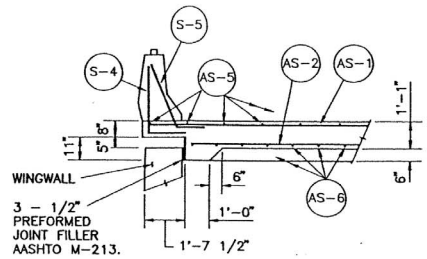
SECTION A–A



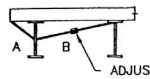
JOINT DETAIL



DETAIL A



SECTION D–D



MEMBER B SHALL BE CAPABLE OF DEVELOPING THE FORCES INDUCED BY MEMBER A. SHOP DRAWINGS REQ. FOR APPROVAL.

ADJUSTABLE TO PROVIDE TIGHT FIT.

BRACING REQUIREMENT FOR FORMING BRIDGE DECK OVERHANG

CONCRETE QUANTITIES CLASS AA(AE)		
LOCATION	NBL (c.y. yds)	SBL (c.y. yds
APPR. SLAB	134.0	134.0
DECK	330.9	330.9
END DIAPHRAM	74.4	74.4
TOTAL	1,078.6	

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

LEHI MAIN STREET INTERCHANGE
I-15 OVER LEHI MAIN ST.
DECK PLAN & SECTIONS

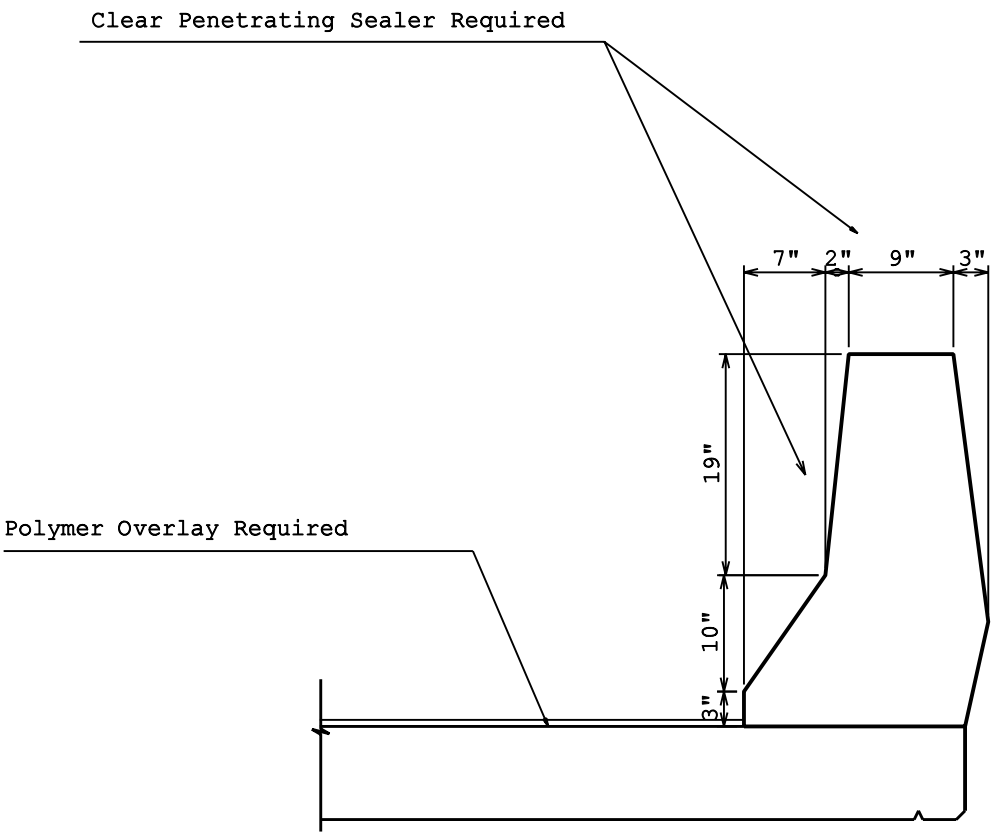
DESIGN	AOB 4-2-91	CHECK	CF 6-92	
DRAWN	BJ 5-7-91	CHECK	AOB 4-2-91	159+70.03
QUANT	AOB 5-7-91	CHECK	CF 6-92	STATION
APPROVAL RECOMM.	DATE	GROUP LEADER		UTAH
APPROVED	DATE	PROJECT ENGINEER		COUNTY

FED. AID PROJ. NO. IR-15-6(107)282 | PROJ. NO. C-753 | SHT. NO. 10 OF 15

NO.	BY	DATE	REMARKS
			REVISIONS

STRUCTURES: C 783 NB & SBL

Polymer Overlay and Concrete Sealant



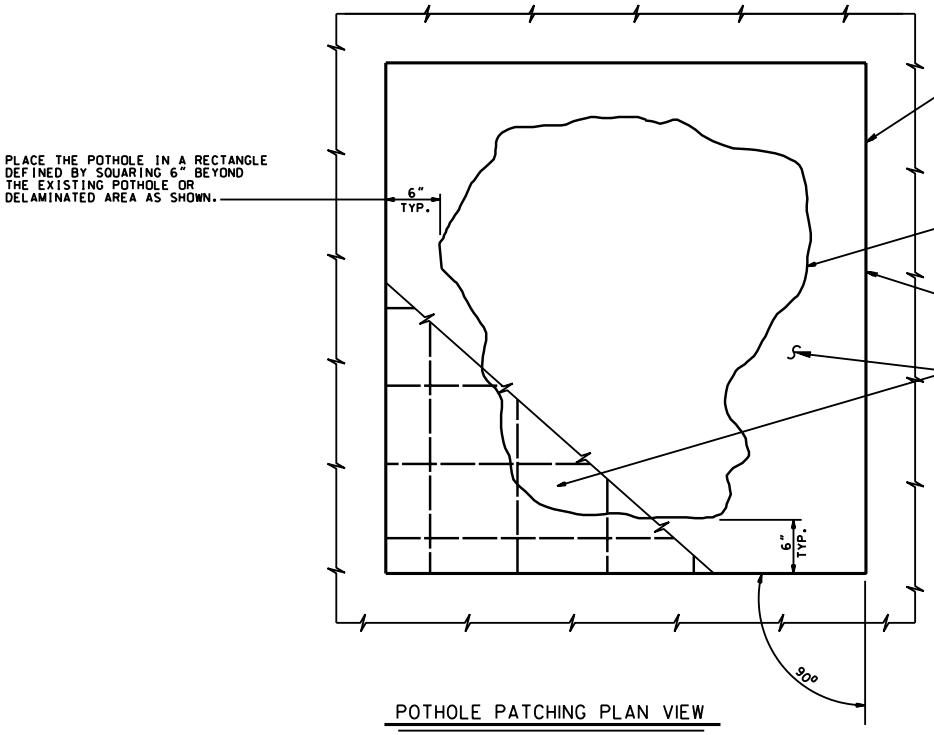
Notes:

1. Apply Penetrating Concrete Sealer to Top and Traffic Face of Parapet Surface.

2. Apply Polymer Overlay to Entire Deck and Approach Slabs Surface Required.

3. After Polymer Overlay,Saw Cut Relief Joints, Install Backer Rod and Reseal with Crumb Rubber Material Required.

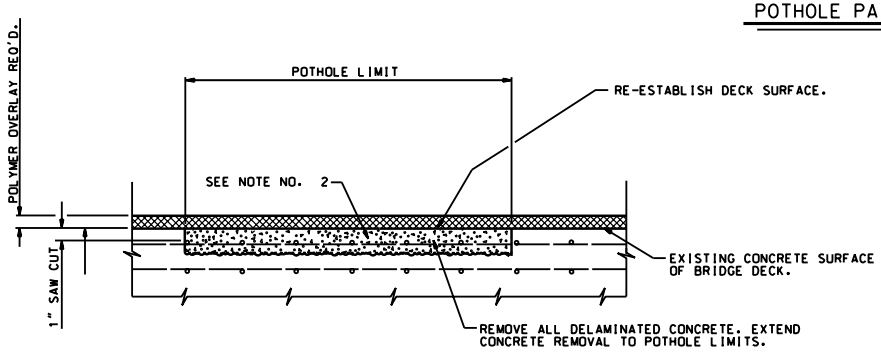
STRUCTURES: C-783 NB & SB



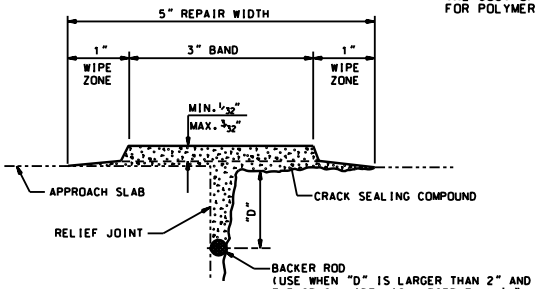
POTHOLE PATCHING PLAN VIEW

NOTES:

1. SAW CUTTING AROUND THE PERIMETER OF THE POTHOLE LIMITS WILL NOT BE REQUIRED WHEN HYDRODEMOLITION METHOD IS USED TO REMOVE THE DELAMINATED CONCRETE.
2. AFTER REMOVAL OF THE CONCRETE FROM THE REPAIR AREA, CLEAN THE REPAIR AREA BY SANDBLASTING. APPLY AN EPOXY RESIN ADHESIVE (MEETING AASHTO 235, TYPE II) FOR BONDING THE PATCHING CONCRETE TO THE EXISTING HARDENED CONCRETE.
3. MARK AREAS TO BE REPAIRED WITH PAINT PRIOR TO SAW CUTTING FOR APPROVAL FROM THE ENGINEER.
4. ESTIMATED UPTO 25% OF DECK/APPROACH SLAB SURFACE AREAS OF BRIDGES TO REQUIRE POTHOLE PATCHING. ACTUAL % OF POTHOLE PATCHING WILL VARY BY EACH BRIDGE.
5. QUICK SETTING MATERIAL WILL BE ALLOWED ON POTHOLE LESS THAN 4" IN DEPTH WITH THE APPROVAL OF THE MANUFACTURER OR THE ENGINEER.
6. APPROVED PATCHING CONCRETE PRODUCTS FROM THE PERFORMANCE DATA PRODUCTS LISTING (PDPL), AVAILABLE AT WWW.DOT.UTAH.GOV/RES - J.1 PCC REPAIR MTLS. - HORIZONTAL.
7. PATCH POTHOLE WITH SIMILAR POLYMER MATERIAL UP TO 1" IN DEPTH. THE COST OF THIS WORK SHOULD BE INCLUDED IN THE CONTRACT PRICE FOR POLYMER OVERLAY.



TYPICAL POTHOLE PATCHING SECTION



JOINT CRACK SEALING DETAIL

X. Standard Drawings Index

(Basic, Dated 03/15/04)

UTAH DEPARTMENT OF TRANSPORTATION

U	NUMBER	TITLE	CURRENT DATE
		Advanced Traffic Management System (AT)	
	AT 1	Legend Sheet	03/15/04
	AT 2	Ramp Meter Details	03/15/04
	AT 3	Ramp Meter Sign Panel	03/15/04
	AT 4	Typical Ramp Meter Signal Head Mounting	03/15/04
	AT 5	Loop Installation	03/15/04
	AT 6	Conduit Details	03/15/04
	AT 7	Polymer-Concrete Junction Box Details	03/15/04
	AT 8	ATMS Cabinet w/120V Disconnect	03/15/04
	AT 9	ATMS Cab With Stepdown Transformer	03/15/04
	AT 10	Domed CCTV Details	03/15/04
	AT 11	CCTV Pole Details	03/15/04
	AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	03/15/04
	AT 13	120V VMS Cab Foundation Details	03/15/04
	AT 14	Weigh In Motion Piezo Details	03/15/04
	AT 15	RWIS Site And Foundation Details	03/15/04
	AT 16	RPU Tower Base And Service Pad Layout	03/15/04
	AT 17	Ground Rod Installation And Tower Grounding	03/15/04
		Barriers (BA)	
	BA 1A	Precast Concrete Full Barrier Standard Section	03/15/04
	BA 1B	Precast Concrete Full Barrier Standard Section	03/15/04
	BA 2	Precast Concrete Half Barrier Standard Section	03/15/04
	BA 3	Cast In Place Constant Slope Barrier	03/15/04
	BA 4A	W-Beam Guardrail Hardware	03/15/04

State Projects With 8 ½ x 11 Plan Sheets

U	NUMBER	TITLE	CURRENT DATE
	BA 4B	W-Beam Guardrail Transition With Jersey Barrier Shape	03/15/04
	BA 4C	Not Used	
	BA 4D	W-Beam Guardrail Anchor Type I	03/15/04
	BA 4E	W-Beam Guardrail Installations	03/15/04
	BA 4F	W-Beam Guardrail Typicals Divided Roadways	03/15/04
	BA 4G	W-Beam Guardrail Typical Multilane Arterial	03/15/04
	BA 4H	W-Beam Guardrail Typical 2 Lane 2 Way	03/15/04
	BA 4I	W-Beam Guardrail Buried In Backslope Terminal	03/15/04
	BA 4J	W-Beam Guardrail Buried In Backslope Terminal With Rub Rail	03/15/04
	BA 4K	W-Beam Guardrail Buried In Backslope Terminal Anchor	03/15/04
	BA 4L	W-Beam Guardrail Curve Details	03/15/04
	BA 4M	W-Beam Guardrail Nested Guardrail 12’ 6” Span	03/15/04
	BA 4N	W-Beam Guardrail Nested Guardrail 18’ 9” Span	03/15/04
	BA 4O	W-Beam Guardrail Nested Guardrail 25” Span	03/15/04
	BA 4P	W-Beam Guardrail With Precast Barrier For Span > 25’	03/15/04
		Catch Basins And Cleanouts (CB)	
	CB 1	Standard Catch Basin	03/15/04
	CB 2	Curb Inlet Catch Basin	03/15/04
	CB 3	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	03/15/04
	CB 4	Solid Cover For Standard Drawing DB 1 MS-18 Loading	03/15/04
	CB 5	Standard Screw Gate And Frame	03/15/04
	CB 6A	Standard Drop Inlet Details General Notes And Installation Details	03/15/04
	CB 6B	Standard Catch Basin And Cleanout Box Drop Inlet Type “A” Details	03/15/04
	CB 6C	Standard Catch Basin And Cleanout Box Drop Inlet Type “B” Details	03/15/04
	CB 6D	Standard Catch Basin And Cleanout Box Drop Inlet Type “C” Details	03/15/04
	CB 6E	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	03/15/04

U	NUMBER	TITLE	CURRENT DATE
	CB 6F	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	03/15/04
	CB 6G	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Details	03/15/04
	CB 6H	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Tables	03/15/04
	CB 7	Standard Curb And Gutter Drop Inlet	03/15/04
	CB 8A	Double Catch Basin	03/15/04
	CB 8B	Double Catch Basin	03/15/04
	CB 9A	Standard Catch Basin And Cleanout Box Situation And Layout	03/15/04
	CB 9B	Standard Catch Basin And Cleanout Box Section Details	03/15/04
	CB 9C	Standard Catch Basin And Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	03/15/04
	CB 9D	Standard Catch Basin And Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	03/15/04
	CB 10A	Standard Catch Basin And Cleanout Box Situation And Layout	03/15/04
	CB 10B	Standard Catch Basin And Cleanout Box Section Details	03/15/04
	CB 10C	Standard Catch Basin And Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	03/15/04
		Crash Cushions (CC)	
	CC 1	Crash Cushion Markings	03/15/04
	CC 2	Crash Cushion Drainage Details Guideline A	03/15/04
	CC 3	Crash Cushion Drainage Details Guideline B	03/15/04
	CC 4	Details For Placement Crash Cushions Type A, B, And D	03/15/04
	CC 5	Grading And Placement Details Crash Cushion Type C	03/15/04
	CC 6	Crash Cushion Type E Sand Barrel Details	03/15/04
	CC 7	Grading And Installation Details Crash Cushion Type F	03/15/04
	CC 8	Grading And Installation Details Crash Cushion Type G	03/15/04
	CC 9A	Grading And Installation Details Crash Cushion Type H	03/15/04
	CC 9B	Grading And Installation Details Crash Cushion Type H	03/15/04
		Diversion Boxes (DB)	
	DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	03/15/04

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U	NUMBER	TITLE	CURRENT DATE
	DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	03/15/04
	DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	03/15/04
	DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	03/15/04
	DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	03/15/04
	DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	03/15/04
	DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls And Apron Details	03/15/04
	DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	03/15/04
	DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	03/15/04
	DB 2D	Standard Diversion Box Type "G" Hand Slide Details	03/15/04
	DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	03/15/04
	DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	03/15/04
	DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	03/15/04
	DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" And "C" Details	03/15/04
	DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	03/15/04
	DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP And Up To 54" CMP	03/15/04
	DB 3C	Standard Diversion Box With Manhole Cover 48" to 72" RCP And 60" to 84" CMP	03/15/04
		Design Drawings (DD)	
	DD 1	Superelevation And Widening	03/15/04
	DD 2	Surface Ditch, Benched Slope, And Cut Ditch Details	03/15/04
	DD 3	Climbing Lanes	03/15/04
	DD 4	Geometric Design for Freeways (Roadway)	03/15/04
	DD 5	Entrance And Exit Ramps At Crossroads	03/15/04
	DD 6	Entrance And Exit Ramp Geometrics	03/15/04
	DD 7	Freeway Crossover	03/15/04

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U	NUMBER	TITLE	CURRENT DATE
	DD 8	Structural Geometric Design Standards For Clearances	03/15/04
	DD 9	Structural Geometric Design Standards	03/15/04
	DD 10	Railroad Clearances At Highway Overpass Structures	03/15/04
	DD 11	Rural Multi Lane Highways Other Than Freeways	03/15/04
	DD 12	Rural Two Lane Highways	03/15/04
	DD 13	Frontage And Access Roads (Under 50 ADT)	03/15/04
	DD 14	Typical Rural 2 Lane Road With Median Lane And Deceleration Lane For Intersecting Crossroads	03/15/04
		Drainage (DG)	
	DG 1	Fill Height for Metal Pipe (Steel)	03/15/04
	DG 2	Fill Height for Metal Pipe (Aluminum)	03/15/04
	DG 3	Maximum Fill Height And End Sections For HDPE And PVC Pipes	03/15/04
	DG 4	Pipe Culverts Minimum Cover	03/15/04
	DG 5	Plastic Pipe, Metal Pipe Or Pipe Arch Culvert Bedding	03/15/04
	DG 6	Precast Concrete Pipe Culvert	03/15/04
	DG 7	Gasketted Joints Or Coupling Bands For CMP	03/15/04
	DG 8	Metal Culvert End Sections	03/15/04
	DG 9	Miscellaneous Pipe Details	03/15/04
		Environmental Controls (EN)	
	EN 1	Temporary Erosion Control (Check Dams)	03/15/04
	EN 2	Temporary Erosion Control (Silt Fence)	03/15/04
	EN 3	Temporary Erosion Control (Slope Drain And Temporary Berm)	03/15/04
	EN 4	Temporary Erosion Control (Drop Inlet Barriers)	03/15/04
	EN 5	Temporary Erosion Control (Sediment Trap And Curb Inlet Barrier)	03/15/04
		Fence And Gates (FG)	
	FG 1A	Right Of Way Fence And Gates (Wood Posts)	03/15/04
	FG 1B	Right Of Way Fence And Gates (Wood Posts)	03/15/04
	FG 2A	Right Of Way Fence And Gates (Metal Posts)	03/15/04
	FG 2B	Right Of Way Fence And Gates (Metal Posts)	03/15/04

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U	NUMBER	TITLE	CURRENT DATE
	FG 3	Swing Gates Type I for Gates Less Than 17’	03/15/04
	FG 4	Deer Gates	03/15/04
	FG 5	Swing Gates Type II For Gates Wider Than 17’	03/15/04
	FG 6	Chain Link Fence	03/15/04
		Grates, Frames, And Trash Racks (GF)	
	GF 1	Manhole Frame And Grated Cover	03/15/04
	GF 2	Manhole Frame And Solid Cover	03/15/04
	GF 3	Rectangle Grate And Frame	03/15/04
	GF 4	Directional Flow Grate And Frame	03/15/04
	GF 5	Solid Cover And Frame	03/15/04
	GF 6	Manhole Steps	03/15/04
	GF 7	Standard Screw Grate And Frame	03/15/04
	GF 8	2’ x 2’ Grate And Frame	03/15/04
	GF 9	28” x 24” Directional Flow Grate And Frame	03/15/04
	GF 10	Standard Trash Racks 90 ° X-ing Angle	03/15/04
	GF 11	Standard Trash Racks	03/15/04
	GF 12	Standard Trash Racks	03/15/04
		General Road Work (GW)	
	GW 1	Raised Median And Plowable End Section	03/15/04
	GW 2	Concrete Curb And Gutter	03/15/04
	GW 3	Concrete Curb And Gutter Details	03/15/04
	GW 4	Concrete Driveways And Sidewalks	03/15/04
	GW 5	Pedestrian Access	03/15/04
	GW 6	Right Of Way Marker	03/15/04
	GW 7	Newspaper And Mailbox Stop Layout	03/15/04
	GW 8	Newspaper And Mailbox Support Hardware	03/15/04
	GW 9	Delineation Hardware	03/15/04
	GW 10	Delineation Application	03/15/04
	GW 11	Sidewalks And Shoulders On Urban Roadways	03/15/04

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U	NUMBER	TITLE	CURRENT DATE
		Paving (PV)	
	PV 1	Joints For Highways With Concrete Traffic Lanes And Shoulders	03/15/04
	PV 2	Pavement/Approach Slab Details	03/15/04
	PV 3	Concrete Pavement Details For Urban And Interstate	03/15/04
	PV 4	Concrete Pavement Details For Urban And Interstate	03/15/04
	PV 5	Urban Concrete Pavement Details	03/15/04
	PV 6	Rumble Strips	03/15/04
	PV 7	Rumble Strips - Typical Application	03/15/04
		Signals (SL)	
	SL 1A	Traffic Signal Mast Arm Pole And Luminaire Extension	03/15/04
	SL 1B	Traffic Signal Mast Arm Pole And Luminaire Extension	03/15/04
	SL 2	Traffic Signal Mast Arm Details 30'Thru 75'	03/15/04
	SL 3	Underground Service Pedestal Details	03/15/04
	SL 4	Traffic Signal Mast Arm Pole Foundation	03/15/04
	SL 5	Traffic Signal Pole	03/15/04
	SL 6	Pole Mounted Power Source Details	03/15/04
	SL 7	Span Wire Signal Pole Details	03/15/04
	SL 8	Signal Head Details	03/15/04
	SL 9	Pedestrian Signal Assembly	03/15/04
	SL 10	Traffic Signal Controller Base Details	03/15/04
	SL 11	Traffic Signal Loop Detector Details	03/15/04
	SL 12	Traffic Counting Loop Detector Details	03/15/04
	SL 13	Not Used	
	SL 14	Highway Luminaire Pole Ground Mount	03/15/04
	SL 15	Luminaire Slip Base Details	03/15/04
	SL 16	Highway Luminaire Pole Barrier Mount	03/15/04
	SL 17	Highway Luminaire Pole Foundation Extension	03/15/04
	SL 18	Single Transformer Substation Details	03/15/04

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U	NUMBER	TITLE	CURRENT DATE
		Signs (SN)	
	SN 1	Bridge Load Limit Signs	03/15/04
	SN 2	School Speed Limit Assembly	03/15/04
	SN 3	Overhead School Speed Limit Assembly	03/15/04
	SN 4	Flashing Stop Sign	03/15/04
	SN 5	Typical Installation For Milepost Signs	03/15/04
	SN 6	Speed Reduction Sign Sequence	03/15/04
	SN 7	Placement of Ground Mounted Signs	03/15/04
	SN 8	Ground Mounted Timber Sign Post (P1)	03/15/04
	SN 9	Ground Mounted Tubular Steel Sign Post (P2)	03/15/04
	SN 10	Ground Mounted Square Steel Sign Post (P3)	03/15/04
	SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	03/15/04
	SN 12A	Ground Mounted Sign Installation Details	03/15/04
	SN 12B	Ground Mounted Sign Installation Details	03/15/04
	SN 12C	Ground Mounted Sign Installation Details	03/15/04
		Striping (ST)	
	ST 1	Object Markers “T” Intersection And Pavement Transition Guidance	03/15/04
	ST 2	Freeway Crossover Markings	03/15/04
U	ST 3	Typical Pavement Markings	03/15/04
	ST 4	Crosswalks, Parking And Intersection Approaches	03/15/04
U	ST 5	Painted Median And Auxiliary Lane Details	03/15/04
	ST 6	Passing/Climbing Lanes Traffic Control	03/15/04
	ST 7	Pavement Markings And Signs At Railroad Crossing	03/15/04
	ST 8	Plowable Pavement Markers	03/15/04
	ST 9	School Crossing And School Message	03/15/04
		Structures And Walls (SW)	
	SW 1A	Welded End Guard Unit	03/15/04
	SW 1B	Precast Concrete Cattle Guard	03/15/04
	SW 2	Noise Wall Placement Area	03/15/04

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U	NUMBER	TITLE	CURRENT DATE
	SW 3A	Precast Concrete Noise Wall 1 Of 2	03/15/04
	SW 3B	Precast Concrete Noise Wall 2 Of 2	03/15/04
	SW 4A	Precast Concrete Retaining/Noise Wall 1 Of 2	03/15/04
	SW 4B	Precast Concrete Retaining/Noise Wall 2 Of 2	03/15/04
		Traffic Control (TC)	
U	TC 1A	Construction Zone Channelization Devices	03/15/04
U	TC 1B	Construction Zone Signing	03/15/04
U	TC 2A	Traffic Control General	03/15/04
U	TC 2B	Traffic Control General	03/15/04
U	TC 3	Traffic Control Project Limit Signing	03/15/04
U	TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	03/15/04
U	TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	03/15/04
U	TC 6	Traffic Control Pedestrian Routing	03/15/04
U	TC 7	Traffic Control Road Closed, Detour	03/15/04
U	TC 8	Traffic Control Lane Closure	03/15/04
U	TC 9	Traffic Control Multilane Closure	03/15/04
U	TC 10	Traffic Control Expressway And Freeway Crossover/Turn-Around	03/15/04
U	TC 11	Traffic Control Exit Ramp Gore	03/15/04
U	TC 12	Traffic Control Entrance Ramp Gore	03/15/04
U	TC 13	Traffic Control Shoulder-Haul Road	03/15/04
U	TC 14	Traffic Control Flagging Operation	03/15/04
U	TC 15	Traffic Control 2 Lane/2 Way Seal Coat With Cover Material	03/15/04
U	TC 16	Traffic Control Pavement Marking	03/15/04

XI. Equal Opportunity (State Projects)

Selection of Subcontractors, Service Providers, Procurement of Materials and Leasing of Equipment:

Do not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

Notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, have equal opportunity to compete for and perform subcontracts that the contractor enters into pursuant to this contract. Use best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Obtain lists of DBE construction firms from SHA personnel.

Use best efforts to ensure subcontractor compliance with their EEO obligations.

Selection of Labor:

During the performance of this contract, do not discriminate against labor from any other State, possession, or territory of the United States.

Employment Practices:

During the performance of this contract, the Contractor agrees as follows:

Do not discriminate against any employee or applicant for employment because of race, religion, sex, color, national origin, age, or disability. Take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or disability. Such action includes, but is not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Department of Transportation setting forth the provisions of this nondiscrimination clause.

In all solicitations or advertisements for employees state that all qualified applicants receive consideration for employment without regard to race, religion, sex, color, national origin, age, or disability.

Send to each labor union or representative of workers that the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Department of Transportation advising the said labor union or worker' representative of the commitments under this section and post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further State contracts.

Include the provisions of this Section in every subcontract or purchase order so that such provision will be binding upon each Subcontractor or vendor. Take such action with respect to any subcontract or purchase order as the State Department of Transportation may direct as a means of enforcing such provisions including sanctions for noncompliance.

XII. Special Provisions

April 12, 2004

Special Provision

SP-15-6(50)280

SECTION 00555 M

PROSECUTION AND PROGRESS

Add to Section 00555, Part 1, article 1.9, paragraph A:

1. Maintain two travel lanes at all times; 12 feet minimum lane width with minimum 2 foot shoulders.

Add to Section 00555, Part 1, article 1.9, paragraph B:

1. Keep all lanes of traffic open and perform no work during the days of June 24 through June 26 (Lehi Round-up), July 2 through July 5, 2004 and July 23 through July 25, 2004.

Add to Section 00555, Part 1, article 1.9:

D. Time Restrictions:
   1. Work Period
      a. Defined as 11:00 p.m. Friday to 6:00 a.m. Monday.
      b. One work period will be charged to the CONTRACTOR once work begins after 10:00 p.m. Friday.
      c. No work on structure deck allowed outside the work period.
   2. A maximum of two (2) work periods are allowed.

E. Incentive/Disincentive

   1. Incentive:
      a. An incentive of $25,000.00 per work period will be given to the CONTRACTOR for an unused work period.
   2. Disincentive:
      a. A disincentive of $25,000.00 per work period will be assessed against the CONTRACTOR for every work period over the two (2) allowed.
      b. The CONTRACTOR will be charged $2,000.00 per 15 minutes per lane for every fifteen minutes traffic is reduced to two lanes outside the work period.

April 7, 2004

Special Provision
SP-15-6(50)280

SECTION 01554 M

TRAFFIC CONTROL

Add to Section 01554, paragraph 1.1 Section Includes:

D. Portable variable message sign.

Add the Section 01554, Part 2, Products:

2.5 PORTABLE VARIABLE MESSAGE SIGN

A. Sign panel:
   1. Minimum height: 6 feet
   2. Minimum width: 10 feet
   3. Minimum character height: 18 inch
   4. Characters: 3 rows, 8 columns
   5. Illumination: Active L.E.D.
   6. Non-reflective black finish.

B. Circuitry control unit:
   1. Photoelectric cell activated by ambient light only and shielded from direct headlights. Must automatically dim the panel to 50 percent of rated voltage at night.
   2. Flash rate: Adjustable
   3. Update speed: 100 milliseconds.
   4. Legibility: 100 feet.

C. Mounting frame on a pneumatic-tire vehicle:
   1. 7 feet clearance between the bottom edge of the sign and the roadway surface.
   2. Frame and sign panel able to withstand 80 mph sustained winds and 100 mph intermittent gusts from any direction.
   3. Panel capable of rotation on a horizontal axis.

D. Power requirements:
   1. Emit bright, distinctive messages to traveling public for a continuous period of time of up to 24 hours per day for a period of 30 days.

Add the Section 01554, Part 3, Execution:

3.7 PORTABLE VARIABLE MESSAGE SIGN

A. Place in view of oncoming traffic without obstructing traffic flow.
   1. Place one sign for each direction of traffic during the work period, northbound and southbound:
      a. 1000 feet north of 1200 West exit
      b. 1000 feet south of American Fork 500 East Exit.

B. Place signs two days prior to the work period.

March 15, 2004

SPECIAL PROVISION

SP-15-6(50)280

SECTION 02765S

PAVEMENT MARKING PAINT

Delete Section 02765 in its entirety and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnish Acrylic Water Based pavement marking paint meeting Federal Specification TTP-1952 D and refer to 2.2 for resin requirement.

B. Apply to hot mix asphalt or Portland cement as edge lines, center lines, broken lines, guide lines, contrast lines, symbols and other related markings.

C. Remove pavement markings.

1.2 REFERENCES

A. AASHTO M 247: Glass Beads Used in Traffic Paint

B. ASTM D 562: Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using the Stormer-Type Viscometer

C. ASTM D 2205: Selection of Tests for Traffic Paints

D. ASTM D 2743: Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography

E. ASTM D 2805: Hiding Power of Paints by Reflectometry

F. ASTM D 3723: Pigment Content of Water-Emulsion Paints

G. ASTM D 3960: Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings

H. ASTM D 4451: Pigment Content of Paints

I. ASTM D 5381: X-Ray Fluorescence (XRF) Spectroscopy of Pigments and Extenders

J. ASTM E 1347: Color and Color-Difference Measurement by Tristimulus Colorimetry

K. Federal Standards

1.3 ACCEPTANCE

A. Provide fixtures (ball valves, gate valves or other) on paint truck for the purposes of obtaining field samples.

B. Agitate the paint to allow for thorough mixing. Follow paint manufacturer's recommendation for agitation and mixing times.

C. Stop all agitation before sample is drawn.

D. All meters on the paint truck must be calibrated annually and certified for application rate verification. Calibration tolerances for meters must be +/- 0.5 pounds per gallon. Keep a clean, legible copy of calibration report with the paint truck. Certifications performed by company personnel, meter calibration companies or UDOT Equipment Certification Unit.

E. UDOT ENGINEER:
   1. Visually inspects each line to verify bead adhesion and compliance with specified line dimensions requirements.
   2. Verifies that the paint and beads are being applied within specified tolerances a minimum of once each production day.
   3. Verifies quantities used by either method:
      a. Measuring both paint and bead tanks prior to and after application.
      b. Witnessing the meter readings prior to and after application.
   4. Randomly sample each color of pavement marking paint used, minimum of one sample each per project.
      a. Use a clean one pint metal paint can.
      b. Sample paint immediately after the paint has been completely agitated. (Stop all agitation before drawing the sample)
      c. Allow a minimum of 10 gallons to be applied prior to taking sample.
      d. Fill the sample container to within ½ inch of full.
      e. Seal the containers immediately by tightly attaching the container's lid.
      f. Submit paint samples to Central Chemistry Lab for acceptance.

g. For each sample include:
   1) Project Number
   2) Project Name
   3) Paint Manufacturer
   4) Batch Number
   5) Striping Company
   6) Color of Paint
   7) Est. Quantity
   8) Date Sampled
   9) Sampler's name

F. Repaint any line or symbol failing to meet bead adherence and dimensional requirements.

G. Price Reductions for Pavement Markings installed below the specified wet mil thickness are outlined in Table I.

H. Contractor will repaint pavement markings that fail to meet the quantitative requirements of this Section, article 2.2, Paint, at no cost to the Department.

Table I - Price Reduction for Wet Mil Thickness	
	Pay Factor
At the specified mil thickness	1.00
1-10 percent below the Specified wet mil thickness	0.75
11-15 percent below the Specified wet mil thickness	0.50
More than15 percent below the Specified wet mil thickness	Repaint Pavement Markings

PART 2 PRODUCTS

2.1 Manufacturers

A. Select an acrylic water based pavement marking paint manufacturer from the Accepted Products Listing (APL) maintained by the UDOT Research Division.

2.2 Paint

A. Follow Federal Standards 595B, 37875, 33538, and 11105. Meet the following quantitative requirements for Acrylic Water Based Paint listed in Table II:

Table II - Quantitative Requirements				
Property	White	Yellow (lead free)	Black	Test
Pigment: Percent by weight	62.0 +/- 2	62.0 +/- 2	62.0 +/- 2	ASTM D 3723
Total Solids: Percent by weight, minimum	77.0	77.0	77.0	ASTM D 2205
Nonvolatile vehicle: Percent by weight vehicle, minimum*	40.0	40.0	40.0	ASTM D 2205
Viscosity, KU @ 77 degrees F	80 - 95	80 - 95	80 - 95	ASTM D 562
Volatile Organic Content(VOC): lbs/gal, maximum	1.25	1.25	1.25	ASTM D 3960
Directional Reflectance: Minimum	92.0	50.0	N/A	ASTM E 1347
Dry Opacity: Minimum (5 mils wet)	0.95	0.95	N/A	ASTM D 2805

* The binder shall be 100 percent acrylic, a minimum of 40 percent, by weight, as determined by infrared analysis and other chemical analysis available to UDOT (ASTM D 2205). Consisting of either Rohm and Haas Fastrack HD- 21A or Dow DT-400NA.

B. Additional requirements:
   1. Free of lead, chromium, or other related heavy metals ASTM D 5381.
   2. ASTM D 2743, ASTM D 4451 and ASTM D 5381: Tests used to verify paint samples meet “Accepted Products Listing.”

2.3 GLASS SPHERE (BEADS) USED IN PAVEMENT MARKING PAINT

A. Specific Properties: Meet AASHTO M 247.
   1. Gradation:

Passing a No. 14 sieve, percent	95 - 100
Passing a No. 16 sieve, percent	80 - 95
Passing a No. 18 sieve, percent	10 - 40
Passing a No. 20 sieve, percent	0 - 5
Passing a No. 25 sieve, percent	0 - 2

   2. Beads having a Silane adhesion coating.
   3. Roundness - The glass beads will have a minimum of 80 percent true spheres.

B. Beads used in Temporary Pavement Markings meet AASHTO M 247 Type II uniform gradation.

PART 3 EXECUTION

3.1 PREPARATION

A. Line Control.
   1. Establish control points at 100 ft intervals on tangent and at 50 ft intervals on curves.
   2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
      a. Remove paint that is not placed within tolerance of the established control points and replace at no expense to the Department. Refer to this Section, article 3.4, Remove Pavement Markings.
      b. Maintain the line dimension within 10 percent of the width and length dimensions defined in ST series Standard Drawings.

B. Remove dirt, loose aggregate and other foreign material and follow manufacturer's recommendations for surface preparation.

3.2 APPLICATION

A. Apply Pavement marking paint at the following Wet mil thickness requirements.
1. 20 – 25 wet mils for all markings.

Example Calculation: (Verify wet mil thickness)

$$\text{Wet Mils} = \frac{(0.133681\ ft^3/gal)}{(X\ ft/gal)(Z\ ft)} * 12000\ mil/ft$$

Where,
X = application rate. (Meter readings or dipping tanks).
Z = line width measured in feet.
12000 = conversion from ft to mil
0.133681 = conversion from gallons to cubic feet.

For information only: Approximate application rate for required mil thickness requirements.
1. 4 inch Solid Line: From 190 to 240 ft/gal
2. 4 inch Broken Line: From 760 to 960 ft/gal
3. 8 inch Solid Line: From 95 to 120 ft/gal

B. Refer to Table I for pavement markings that are less than 20 wet mils in thickness.

C. No additional payment for pavement markings placed in excess of 25 wet mils in thickness or exceeding dimensional requirements outlined in this Section, article 3.1, Preparation, paragraph A.

D. Painted Legends and Symbols 1 gallon per 80 square feet. Provide Engineer calculations of legends and symbols for pay determination.

E. Glass Sphere (Beads): Apply a minimum of 8 lbs/gal of paint, the full length and width of line and pavement markings.
1. Do not apply glass beads to contrast lines (black paint).

F. Begin striping operations no later than 24 hours after ordered by the Engineer.

G. At time of application apply lines and pavement markings only when the air and pavement temperature are:
1. 50 degrees F and rising for Acrylic Water Based Paint.

H. Comply with TC series Standard Drawings.

3.3 CONTRACTOR QUALITY CONTROL

A. Application Rate: Verify that the paint and beads are being applied within specified tolerances prior to striping.

B. Curing: Protect the markings until dry or cured. In the event that the uncured marking is damaged the marking will be reapplied and track marks left on the pavement will be removed at no additional cost to the Department.

3.4 REMOVE PAVEMENT MARKINGS

A. Use one of these removal methods:
   1. Grinding
   2. High pressure water spray
   3. Sand blasting
   4. Shot blasting.

B. Do not eliminate or obscure existing striping, in lieu of removal, by covering with black paint or any other covering material.

C. Use equipment specifically designed for removal of pavement marking material.

END OF SECTION

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SPECIAL PROVISION

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SECTION 03371S

EPOXY-URETHANE POLYMER CRACK TREATMENT AND WATERPROOFING OVERLAYS FOR BRIDGE DECKS AND APPROACH SLABS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Materials and procedures for applying a protective crack treatment and bridge deck overlay using epoxy-urethane polymers and a broadcast aggregate wearing surface.

1.2 REFERENCES

A. ASTM D-638: Tensile Stress and Load Bearing Capacity

B. ASTM C-566: Aggregate Testing

C. Mohs Scale Hardness Test

D. Sieve Analysis: Aggregate Gradation

E. ASTM C-109: Compressive Strength of Hydraulic Cement Mortars

F. ASTM C0778: Sampling

G. ASTM D-570: Water Absorption of Plastics

H. ASTM D-2240: Rubber Property – Durometer Hardness

I. ASTM C-501: Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abrader

J. ACI – 503R: Adhesion to Concrete, Pull Out Test

K. California Test Method 419: Flexural Creep

L. ASTM D-790: Flexural Yield Strength

M. ASTM D-971: Surface Tension

N. NCHRP 244: Chloride Penetration Test Method

O. ASTM 4065-95: Dynamic Mechanical Analysis

1.3 SUBMITTALS

A. Submit the name of the manufacturer of the Polymer Overlay materials at the Pre-Construction Meeting.

B. Submit at the Preconstruction Meeting, a Certificate of Compliance from an independent nationally recognized laboratory stating that the polymer overlay materials meet the requirements listed in Tables 1, 2, 3, 4, 5 and other material requirements contained in this specification.

C. Submit a name and phone number of the Manufacturer's Technical Support Representative at the Preconstruction Meeting.

PART 2 PRODUCTS

2.1 EPOXY-URETHANE BRIDGE DECK OVERLAY SYSTEM

A. Install an **epoxy-urethane bridge deck overlay system** consisting of surface preparation, application of a pretreatment for crack filling and bonding, and two (2) coats of an epoxy-urethane polymer resin broadcast with a high wear, high skid aggregate that chemically cures to provide an impervious wearing surface.

2.2 STEEL SHOT BLAST

A. Clean concrete surfaces using a Steel Shot Blast in accordance with the recommendations of the polymer overlay manufacturer.

2.3 PRETREATMENT AND CRACK FILLER

A. After cleaning the concrete surface, apply a two (2) component pretreatment to the bridge deck to fill minor cracks and increase the bond strength between the overlay and the deck surface. Pretreatment to comply with the physical properties of TABLE 1:

TABLE 1 PHYSICAL PROPERTIES OF THE PRETREATMENT SYSTEM	
Property	Value
Compressive Strength, min. psi	5,500 – 6,000
Tensile Strength, min. psi	3,100 – 3,400
Tensile Elongation, percent min.	35 ±5
Water Absorption, percent by wt. Max.	<0.10
Shore D Hardness, 77°F min.	70 ±5
Gel Time, minutes	48-52 (7 oz.)
Adhesion to Concrete	100% failure in concrete
Surface tension	Less than 0.0012 pounds/in^3
Percent Solids	100

2.4 EPOXY-URETHANE POLYMER OVERLAY

A. After applying the pretreatment, apply two (2) layers of a two-part epoxy-urethane co-polymer resin and saturate it with a broadcast aggregate before it cures. The polymer overlay is to be free of any fillers, volatile solvents and the use of external/conventional flexiblizers is not permitted. They polymer is to be formulated to volumetric mixing proportions (such as 1 part A to 1 part B), according to the manufacturer's recommendations. The cured polymer system is to comply with the physical requirements of TABLE 2.

TABLE 2 PHYSICAL PROPERTIES OF THE EPOXY-URETHANE OVERLAY SYSTEM	
Property	Value
Compressive Strength, min. psi	7,000
Tensile Strength, min. psi	2,500
Tensile Elongation, percent min.	35 ±5
Water Absorption, percent by wt. Max.	0.20
Shore D Hardness, 77°F min.	65 ±5
Gel Time, minutes	22-31
Abrasion Resistance, oz., max.	0.003
Adhesion to Concrete	100% failure in concrete
Flexural Creep: Total Movement in 7 days	.0065 inches minium
Flexural Yield Strength, min. psi	5,000
Percent Solids	100

B. The modulus of the cured epoxy-urethane system is to comply with the requirements of TABLE 3, using a variable temperature Dynamic Mechanical Analysis (DMA) at a frequency of 1 HZ with a 0.3% strain using ASTM D-4065-95.

C. The cured epoxy-urethane system is to conform to a load bearing capacity of retaining 85% of its original load bearing strength at (tensile strength) as 20% strain using ASTM method D-638.

TABLE 3 VISCO-ELASTIC PROPERTIES OF THE EPOXY-URETHANE SYSTEM		
TEMPERATURE	STORAGE MODULUS pounds/in^2	LOSS MODULUS Pounds/in^2
14°F	$1.45X10^5$	$8.70X10^3$
68°F	$1.01X10^5$	$1.30X10^4$
122°F	$5.80X10^3$	$4.35X10^3$
140°F	$1.45X10^3$	$1.01X10^3$
158°F	$8.70X10^2$	$2.90X10^2$

2.5 AGGREGATE

A. An aggregate wearing surface is to be broadcast into the epoxy-urethane system according to the manufacturer's specifications. The aggregate used is to be no-friable, non-polishing, clean and free of surface moisture. It should have a proven record of durability in this type of application. 100% of the aggregate is to have at least 1 mechanically fractured face for materials being retained on the #10 sieve. The aggregate is to be thoroughly washed, kiln dried to maximum moisture content of 0.2% by weight (ASTM C-566). The recommended aggregate is Washington Stone. Alternate aggregates may be allowed upon approval by the manufacturer and ENGINEER.

B. The aggregate is to meet the physical properties of TABLE 4 and TABLE 5:

TABLE 4 AGGREGATE PROPERTIES	
GLACIAL GRAVEL	BASALT QUARTZITE GRANITE (% by Weight)
$Si0_2$	75.03
Al_2O_3	11.49
Fe_2O_3	3.57
CaO	2.84
MgO	1.59
SO_3	0.08
Na_2O	2.58
K_2O	0.99
Combined Alkali	3.20
Ignition Loss	1.72
Mohs Scale Hardness	6.50
ASTM 566 (water absorption)	0.2%

TABLE 5 AGGREGATE GRADATION	
Sieve Size	Percent Passing
0.187 in; No.6	100
0.078 in; No.10	10 – 35
0.033 in; No.20	0 – 10

PART 3 EXECUTION

3.1 SURFACE PREPARATION

A. Pot-Hole Patching: Repair any minor potholes of the surface area of the deck with a similar epoxy-urethane material in accordance with the recommendations of the manufacturer and the ENGINEER. Any costs associated with the pothole repairs are included in with the Bid Item for the Polymer Overlay System.

B. Shot-Blasting: The entire deck is to be cleaned by steel shot-blasting to remove any oil, dirt, rubber or other materials that, in the opinion of the manufacturer or ENGINEER, may be detrimental to the bonding and curing of the polymer overlay.

C. Curbs: In areas that cannot be reached with the steel shot-blasting, such as curbs, sandblasting equipment or mechanical grinders are permitted with the approval of the manufacturer or ENGINEER.

D. Traffic: Traffic is not to be allowed on any portion of the deck, which has been shot-blasted. The overlay equipment will be allowed on cleaned surfaces under the supervision of the manufacturer.

E. Weather: All surfaces to be treated are to be dry at the time of application. The polymer overlay system is not to be applied when it has rained within 24 hours, or is expected to rain within 8 hours. Moisture content in the concrete substrate is not be exceed 4.5% when measured by an electronic meter. The minimum recommended temperature is 50°F and increasing. The polymer overlays are not to be applied before April 15th, or after September 30th.

3.2 APPLICATION

A. Sound Surface: The application of the pretreatment and Epoxy-Urethane Overlay Systems are to be on a structurally sound concrete surface and in accordance with the manufacturer's specifications.

B. Metered Mixing Equipment: The overlay shall be applied on all deck areas using metering, mixing and distribution machinery *owned and operated* by the manufacturer. The application machine shall feature positive displacement volumetric metering pumps controlled by a hydraulic power unit. Components shall be stored in temperature controlled reservoirs capable of maintaining 100° ±10°F to insure optimum mixing. Ratio check verification at the pump outlets as well as cycle counting capabilities to monitor output will be standard features. In line mixing shall be motionless so as to not overly shear the material or entrap air in the mix. The machine shall maximize working time of the material by mixing it immediately prior to dispensing.

C. Layer Thickness: The number of layers and the application rates of the liquid in the various layers shall be as recommended by the manufacturer in order to achieve a minimum overlay thickness of 0.375 in.

D. First Layer:

1. Application of the Liquid: After manually or mechanically measuring and mixing of the components, the liquid shall be evenly distributed on the clean, dry deck surface at the rate as recommended by the manufacturer. After the entire deck surface is wet, allow 1-2 hours for the liquid to achieve full depth penetration into cracks as well as adequately encapsulate the steel grid, if any. After the liquid is allowed to penetrate, medium size coarse silica sand may be broadcast evenly if the subsequent application is going to be applied after 8-12 hours.

E. Second Layer: Prior to the application, if there exists any excess or loose aggregate from the previous coat, such excess aggregate shall be completely removed by vacuum or with compressed air. After mixing of the components via the mechanical application equipment, the liquid shall be evenly distributed on the clean, dry deck surface at the rate as recommended by the manufacturer.

F. Time Limits For Aggregate: After the application of the liquid in the first and second coats, the maximum time allowed before broadcasting of the aggregate is as follows:

Above 90°F	10 minutes
80°F to 90°F	15 minutes
70°F to 80°F	20 minutes
60°F to 70°F	25 minutes
50°F to 60°F	35 minutes

G. Broadcasting Aggregate: Broadcasting on decks shall be by truck-mounted equipment capable of dispensing the aggregate onto the deck in a uniform manner as directed or otherwise approved by the manufacturer. The aggregate shall be broadcast such that to cover the surface so that no wet spots appear and before the co-polymer begins to gel. The aggregate must be dropped vertically in such a manner that the level of the liquid is not disturbed. In the first and second layers of the liquid, aggregate conforming to TABLES 4 and 5 of this specification shall be broadcast to saturate until no wet spots remain.

H. Removal Of Excess Aggregate: After the overlay has hardened, removal of all loose and excess aggregate with a power vacuum or other method shall be made prior to the application of subsequent coats.

I. Longitudinal Joints In The Overlay: (i.e., between two adjacent lanes) shall be staggered and overlapped between successive coats so that no ridges will appear.

J. Traffic: Traffic may be allowed on the final layer, on in between layers after the resin has cured (as determined by the manufacturer) and after removal of all excess, loose aggregate.

K. Storage And Handling, Liquid Material: All material shall be transported and stored in their original containers inside a dry, temperature controlled facility and maintained at a minimum temperature of 60°F to 90°F.

L. Job Site Storage: The materials shall be stored on the job site in a dry, weather protected facility away from moisture and within the temperature range of 60°F to 90°F. When the materials are transported or stored on the job, in the application machine tanks, the material must also be maintained at a temperature of 60°F to 90°F.

M. Handling Of Liquid Materials On The Job: Protective gloves, clothing, boots and goggles shall be provided to workers and inspectors directly exposed to the material. Product safety data sheets shall be provided to all workers and inspectors as obtained from the manufacturer.

N. Aggregate: All aggregate shall be stored in a dry, moisture-free atmosphere. The aggregate shall be full protected from any contaminants on the job site and shall be stored so as not be exposed to rain or other moisture sources.

3.3 QUALITY CONTROL

A. Technical Support Representative: The manufacturer shall have a representative on the job site at all times who, upon consultation with the ENGINEER, may suspend any item of work that is suspect and does not meet the requirements of this specification. Resumption of work will occur only after the manufacturer's

representative and the ENGINEER are satisfied that appropriate remedial action has been taken by the CONTRACTOR.

B. Warranty: The epoxy-urethane co-polymer manufacturer and the CONTRACTOR shall jointly guarantee the wearing surface against all defects incurred during normal traffic for a **period of three (3) years**, for any delamination or reduced skid (less than 50). The guarantee period shall commence on the date of acceptance of work (typically the date traffic is allowed on surface),

C. Samples: The manufacturer shall furnish at least one-liter sample of each component from each lot to the DOT laboratory to verify material supplied.

D. Prior Performance: The selected material must have a satisfactory performance in Utah for at least 2-years from the time of placement.

E. Packing Requirement: All materials must be packed in strong, substantial containers. The containers shall be identified as Part A and Part B and shall be plainly marked with the name and address of the manufacturer, name of the product, mixing proportions and instructions, lot and batch numbers, date of manufacture and quantity contained therein.

F. Material Quality Control And Testing Methods: The materials used shall meet the properties specified in the tables and other sections of this specification, and shall also meet the following correspondence tests for quality control:

1. Compressive Strength: ASTM C-109, *Compressive Strength of Hydraulic Cement Mortars.* The two components of the resin are to be thoroughly mixed in their appropriate ratios. Two volumes of graded silica sand in accordance with ASTM C-778 shall be added to one volume of mixed resin. The samples shall then be prepared according to the requirements of ASTM C-109 and allowed to cure for 7 days at 73° $\pm$4°F.

2. Tensile Strength and Elongation: ASTM D-638, *Tensile Properties of Plastics*, Specimen Type I or Type II. Samples shall be cured at 73° $\pm$4°F and 50 $\pm$5% relative humidity. Speed of testing shall be 0.5 in./min.

3. Water Absorption: ASTM D-570, *Water Absorption of Plastics*. Sample specimens shall be prepared according to Section 4.1 and allowed to cure at 73° $\pm$4°F and 50 $\pm$5% relative humidity. Tests are then to be carried out as per Section 6.1.

4. Shore D Hardness: ASTM D-2240, *Rubber Property – Durometer Hardness*. Specimen shall be prepared as per ASTM D-570 Section 4.1 and allowed to cure at 73 $\pm$4°F.

5. Gel Time: The following procedure shall be used to determine gel time: Measure 4 oz. of Part A and 2 oz. of Part B each at 77°F, into an unwaxed paper cup and record the time and mix immediately. 3.5 oz. of this mixture shall be poured into a 6 oz. unwaxed paper cup and placed on a wooden bench top. Starting twenty (20) minutes from the time recorded above, the mixture shall be probed every two (2) minutes with a small stick until a small ball forms in the center of the container. The total time, including mixing, required for the ball to form shall be regarded as the gel time. The test shall be performed in a room or enclosed area maintained at 77° ±4°F and 50 ±5% relative humidity.

6. Abrasion Resistance: ASTM C-501, *Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abrader*. Tests shall be done using a CS-17 wheel and a 2.2 pound load for 1,000 cycles.

7. Adhesion to Concrete: ACI-503-R, Pull Out Test.

8. Flexural Creep: California Test Method 419.

9. Flexural Yield Strength: ASTM D-790.

10. Surface Tension: ASTM D-971.

END OF SECTION

April 7, 2004

SPECIAL PROVISION

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SECTION 03392S

CLEAR PENETRATING CONCRETE SEALER FOR BRIDGES

Delete Section 03392 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Materials and procedures for applying protective penetrating concrete sealers (**vinyl toluene acrylic silane polymer**) on traffic and top face of bridge parapets.

1.2 REFERENCES

A. AASHTO T 260: Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials.

B. ASTM C 267: Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes.

C. ASTM C 666: Resistance of Concrete to Rapid Freezing and Thawing.

D. ASTM E 274: Skid Resistance of Paved Surfaces Using a Full-Scale Tire.

1.3 SUBMITTALS

A. Certificate of Compliance to the ENGINEER or the Construction and Materials Division.

B. One liter of the product to the ENGINEER for each lot of material

C. Material Safety Data Sheets (MSDS).

D. Each container is clearly marked with lot numbers, date of manufacture, pertinent safety and handling information, and emergency contact phone numbers.

PART 2 PRODUCTS

2.1 PENETRATING CONCRETE SEALERS

A. Vinyl toluene acrylic silane polymer blend penetrating sealant for concrete surfaces. Substitution of the alktrialkoxy film forming silane by silicones or siloxanes will not be permitted.

B. Slight color dies are allowed for application purposes, with clear appearance within 7 days of application.

C. Comply with Federal VOC requirements.

D. Comply with requirements of Table 1:

Table 1

Penetrating Concrete Sealer Requirements				
*** Properties**	**Requirements**	**ASTM**	**AASHTO**	**** UDOT**
Accelerated Weathering	As Specified	C 666	T 260	
Freeze-thaw Test Medium	# 3 % Road Salt			Sealer Studies
Minimum Depth Penetration	$ 5/32 in.			Sealer Studies
Freeze-thaw Weight Loss	# 6 % 300 Cycles			Sealer Studies
Chemical Resistance	Subsections: 1.1.2 1/1/3	C 267		
Friction Number	$ 40	E 274		
Infrared Spectrogram	Materials Division Base Comparison			Materials Studies

* Certified test results from a private accredited testing laboratory will suffice for acceptance.

** Utah Department of Transportation, Materials and Research Division concrete sealer studies of 1986 and 1990.

PART 3 EXECUTION

3.1 PREPARATION

A. Clean concrete surfaces of latence, dirt, dust, grease, oil, and other contaminants using a low pressure hydro-wash, according to the manufacturers recommendations, without causing undue damage to the concrete surfaces or exposing the course aggregate of the concrete.

B. Allow cleaned surfaces to sufficiently dry after cleaning process before applying sealant (2 hours minimum, or longer according to the manufacturers recommendations, which ever is greater). Apply sealants no later than 3 calendar days after cleaning the concrete surfaces.

C. Supplier of the sealant product must have a technical support person available at the job site within 24 hours of notification for quality control purposes.

D. Place the sealant material only after obtaining the approval from the ENGINEER.

3.2 APPLICATION

A. Application Rate:
   1. Based upon the residue content at a coverage rate of 0.012 pounds/ft^2.
   2. Apply according to manufacturers recommendation for each of the following surfaces: Horizontal, Vertical, Overhead.

B. The sealant solution shall not be diluted in any way.

C. Use low pressure airless sprayers or horticulture type spray bars to allow proper application of material.

D. Application Drying Time: Select a sealer with maximum drying time of 1 1/2 hours, and the ability to allow traffic on the treated surfaces within 4 hours of application without tracking or damage to vehicles.

E. Apply sealant only when ambient air and concrete temperatures are above 50 degrees F.

F. Prevent sealant from blowing or tracking onto vehicles. Sealant shall not be applied when blowing winds, inclement weather or other conditions prevent proper application

END OF SECTION

April 7, 2004

SPECIAL PROVISION

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SECTION 03934S

STRUCTURE POTHOLE PATCHING (QUICK SET)

Quick-Setting Patch Materials (Horizontal Only)

Delete Section 03934 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Procedures for preparing and installing fast setting concrete repair materials on bridge decks and approach slabs.

1.2 REFERENCES

A. ASTM C 267: Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer concretes.

B. ASTM C 666(modified): Resistance of Concrete to Rapid Freezing and Thawing.

C. ASTM E 274: Skid Resistance of Paved Surfaces Using a Full-Scale Tire.

D. Utah Department of Transportation's Material Test for Bond and Durability.

E. ASTM C 109: 2" x 2" x 2" Cubes.

F. Utah Department of Transportation Standard Specifications: 03934 Structural Pothole Patching.

1.3 SUBMITTALS

A. Certificate of Compliance to the Engineer.

PART 2 PRODUCTS

2.1 GENERAL

A. The material is packaged and ready for mixing just prior to use in accordance with the manufacturer's instructions.
   i. Concrete gray in color and contains no calcium chloride or admixture containing calcium chloride, or other ingredient in sufficient quantity to cause corrosion to steel reinforcement.
   ii. Quick-setting rapid strength gain, non-shrink and high bond strength characteristics are needed.

2.2 FAST SETTING CEMENTITIOUS CONCRETE REPAIR MATERIALS

A. For pothole less than 4 inches in depth, the use of quick-setting materials will be allowed with the prior approval of the Engineer or manufacturer, including quick-setting cementitious concrete, epoxies, and urethane material at least 7 days prior to use.

B. Approved patching concrete products from the Performance Data Product Listing (PDPL), available at www.dot.gov/res - J.1. PCC Repair Mtls- Horizontal.

C. REQUIREMENTS

Fast Setting Concrete Repair Materials

*Properties	Requirements	ASTM	AASHTO	**UDOT
Accelerated Weathering	As Specified	C 666(Modified)	T 260	
Accepted Bond Strengths	>1,000 psi @ 24 Hours			UDOT Slant/Shear Bond Test
Test Medium	<3% White Utah Road Salt			UDOT Freeze/Thaw Weight Loss
Accepted Weight Loss	<15% @ 300 Cycles			UDOT Freeze/Thaw Weight Loss
Friction Number	>40	E 274		

- Certified test results from a private AASHTO accredited testing laboratory will suffice for acceptance.

** Utah Department of Transportation, Research Division, fast setting concrete repair materials studies from 1991 through 1995.

PART 3 EXECUTION

3.1 PREPARATION

A. Traditional Method-Saw Cut & Jackhammer 1" deep to concrete thickness.

B. Keep bonding surfaces free from laitence, dirt, dust, paint, grease, oil, rust, or any other contaminant other than water.

3.2 INSTALLATION

A. Pre-test the materials under field conditions at the patch depth anticipated to determine whether subsequent cracking will occur. The corrective action will be at the discretion of the Engineer.

B. Saturate surface dry (SSD) all surfaces receiving fast setting concrete repair materials in accordance with manufacturer's recommendation.

C. Scrub a small amount of fast setting concrete repair material to the walls and bottom of the prepared surface. Apply product, consolidate, strike off and finish repair area. Follow manufacturer's recommendations for product preparation and installation. Repairs shall be within 1/16th inch plus or minus the surrounding pavement.

D. Fast setting concrete repair material must meet a minimum compressive strength of 3,000 psi in 4 hours according to test cylinders taken. One cylinder per batch for the first two days to determine consistency of product then random cylinders there after.

E. Cure fast setting concrete repair material per manufacturer's recommendation. If the heat of hydration is shown to be excessive, the manufacturer’s representative must be contacted for advice on how to reduce the heat, such as wet curing or adding retarding admixture.

F. If the Contractor is adding more than 15 pounds of size No. 8 coarse aggregate per bag of quick setting patch material, the mix design must be in accordance with the requirements of Section 03055.

END OF SECTION